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WORLD INTELLECTUAL PROP
International E

INTERNATIONAL APPLICATION PUBLISHED UNDE



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(51) International Patent Classification 6:	(11) b	WO 9605370A1 IEP 0276395
D21F 1/48	A1	(43) International Publication Date: 22 February 1996 (22.02.96)

(21) International Application Number:	PCT/FT95/00413	(81) Designated States: AM, AT, AU, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LT, LU, LV, MD, MG, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TI, TM, TT, UA, UG, US, UZ, VN, European patent (AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG), ARDO patent (KB, MW, SD, SZ, UG).
(22) International Filing Date:	3 August 1995 (03.08.95)	
(30) Priority Date:	943777 17 August 1994 (17.08.94) FI	
(71) Applicant (for all designated States except US):	VALMET PAPER MACHINERY INC. (FI/FI); Panuraitie 6, FIN-00620 Helsinki (FI).	
(72) Inventor; and		
(73) Inventor/Applicant (for US only):	TELAMA, Ar (FI/FI); Ristiläiventie 20 A 1, FIN-40520 Jyväskylä (FI).	
(74) Agent:	LAINE, Seppo et al.; Seppo Laine Oy, Lonnioinkatu 19 A, FIN-00120 Helsinki (FI).	
(75) Published		With international search report. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.

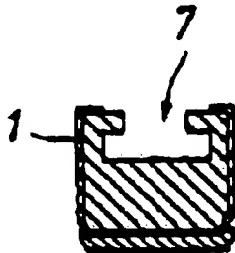
✓ Graham Johnson, M7
✓ Gordon Kempster, M4

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(54) Title: WATER REMOVAL ELEMENT IN A PAPER MACHINE AND METHOD OF MANUFACTURING SUCH AN ELEMENT

(57) Abstract:

Paper and board machines require the use of fixed water removal elements adapted to squeeze the wire or press felt of the machine from the side opposite to the sheet side of the wire/felt, whereby water is removed from the wire/felt. The present invention relates to a water removal element comprising a body (1, 6) and a ceramic wear-resisting coat (5). The body (1, 6) comprises an elongated continuous section forming a bounded space into which a thermoset plastic compound fil (5) can be cast, and at least one surface suited to accommodate the adherence of said wear-resisting coat (5). The bounded interior space of the continuous section body is at least partially filled with said thermoset plastic compound fil (5) and said ceramic wear-resisting coat (5) is formed by a ceramic coat (3) applied by thermal spray-coating onto a surface of the continuous section body (1).



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Claims:

1. A water removal element in a paper or board machine, said element comprising a body (1, 6) and a ceramic wear-resisting coat (5).

characterized in that

- said body (1, 6) comprises

- an elongated continuous section forming a bounded space into which a flowing material (6) can be cast, and at least one surface for ed to accommodate the adherence of said wear-resisting coat (5).

- a thermoset plastic compound fill (6) cast to fill said bounded space at least partially, and

- said ceramic wear-resisting coat (5) is formed by a ceramic coat (5) applied onto a surface of the continuous section body (1) by thermal spray-coating.

2. A water removal element as defined in claim 1, characterized in that said continuous section (1) constituting the casting mould has an open cross-sectional shape, advantageously approximating a U-shape having its interior at least partially filled with a thermoset plastic compound and having said ceramic coat (5) adhered to its base part (3).

3. A water removal element as defined in any of claims 1 and 2, characterized by a slot (7) machined into the thermoset plastic compound fill (6) for mounting the element to a support frame.

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4. A water removal element as defined in any of claims 1 - 3, characterized by having the coat (5) made from one of the following compounds: Al_2O_3 , Cr_2O_3 , ZrO_2 , TiB_2 , SiO_2 , TiO_2 , WC and Cr_3C_2 , or a mixture thereof.

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5. A water removal element as defined in any of claims 1 - 4, characterized by having the coat (5) sealed by impregnation with, e.g., a compound selected from the group of the following compounds: phenolic resins, fluorinated resins, epoxy resins, phosphate compounds and methacrylate resins.

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6. A water removal element as defined in any of claims 1 - 5, characterized by having the fill compound of the continuous section (1) selected from one of the following groups of compounds: epoxy resins, methacrylate resins, polyester resins, vinyl ester resins and phenolic resins.

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7. A method of manufacturing a water removal element, characterized in that said method comprises at least the following steps:

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- a ceramic coat (5) is applied onto at least one surface of the continuous section (1) by thermal spray-coating, and

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- the interior of the continuous section (1) is filled at least partially with a thermoset plastic compound fill (6).

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8. A method as defined in claim 7, characterized in that the ceramic coat (5) is sealed by impregnating with a sealing compound.

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9. A method as defined in claim 7 or 8, characterized in that a mounting slot (7) is machined

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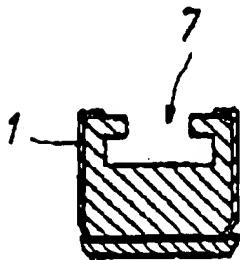
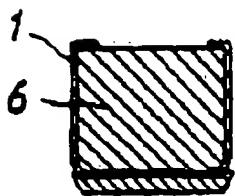
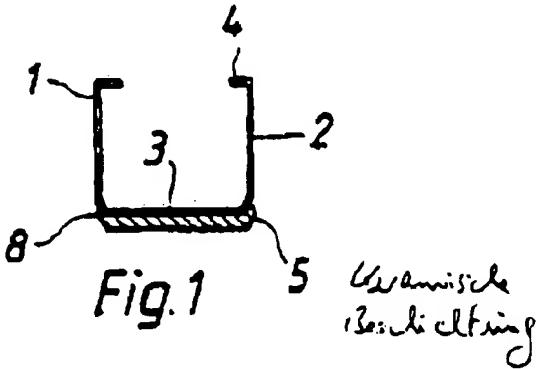
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into said thermoset plastic compound fill (6) after the curing step of the plastic compound.

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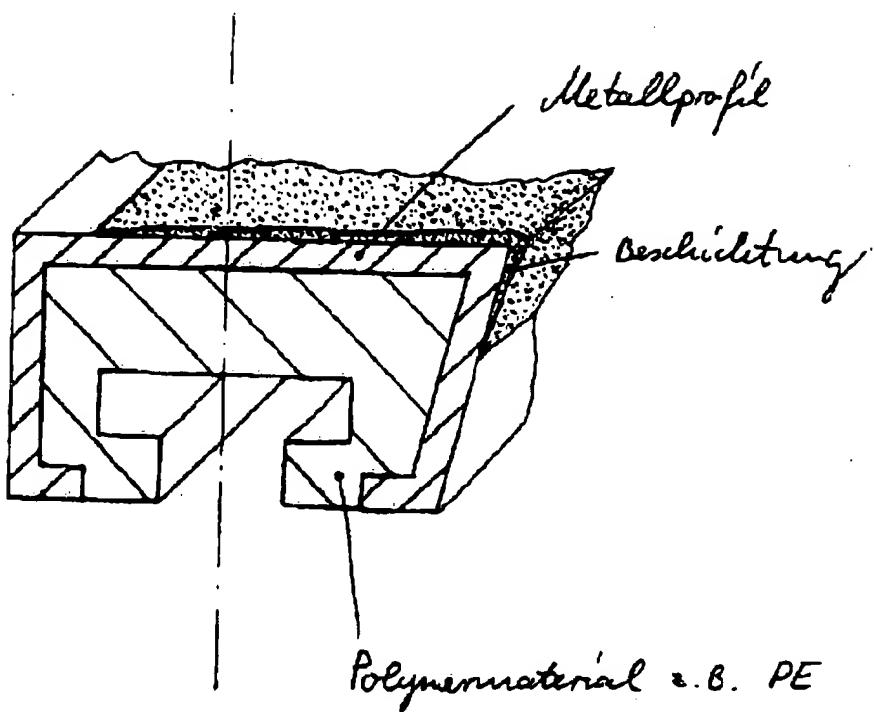
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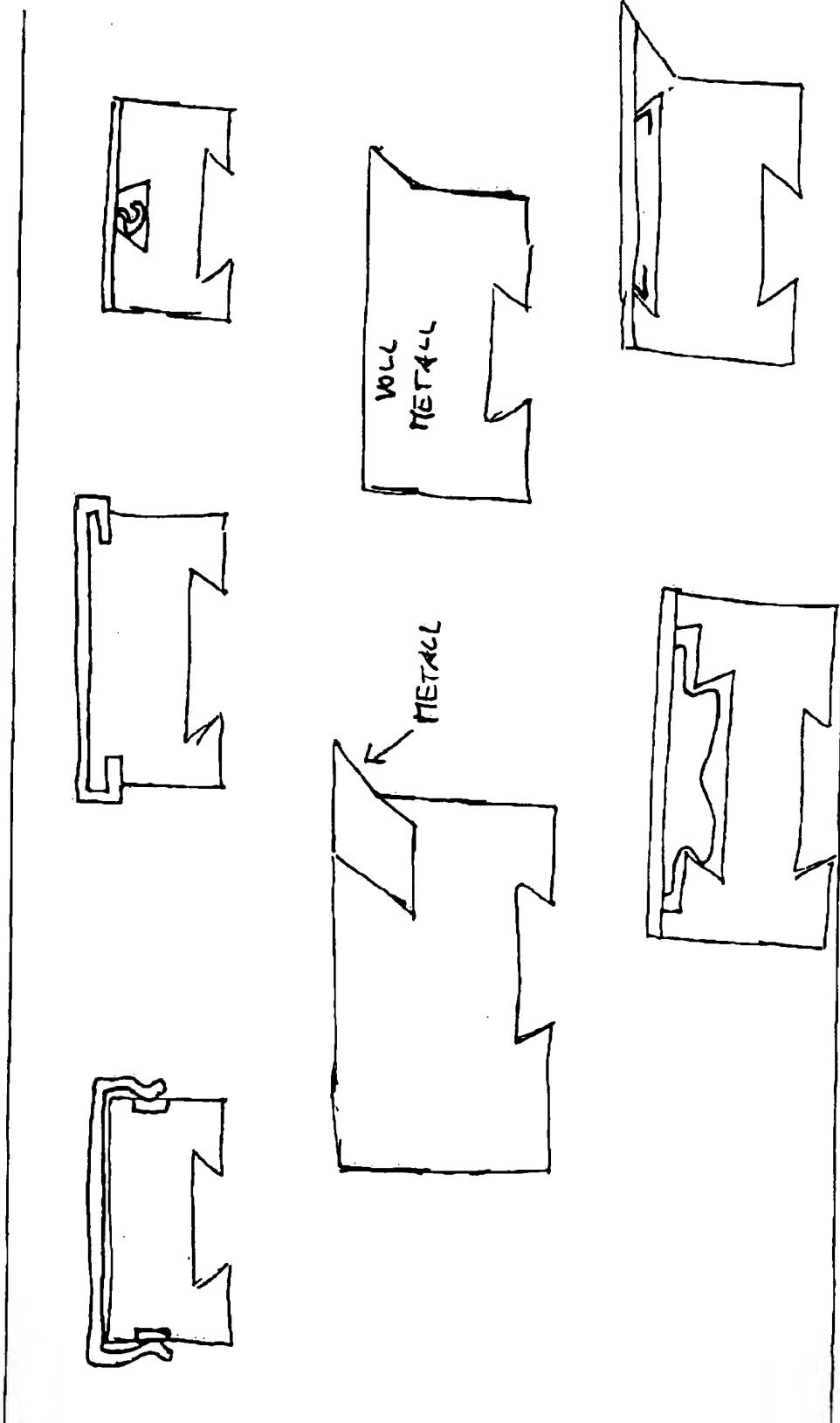


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